UNITED STATES PATENT AND TRADEMARK OFFICE

_____

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

_____

Ex parte MARTIN SCHLANG, FRANK-OLIVER MALISCH,
EINAR BROESE and OTTO GRAMCKOW

_____

Appeal No. 1999-1856
Application No. 08/686,792

_____

ON BRIEF

_____

Before LALL, DIXON, and BLANKENSHIP, **Administrative Patent Judges**.

DIXON, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 15-26, which are all of the claims pending in this application.

We AFFIRM.

BACKGROUND

The appellants' invention relates to a learning process for a neural network. An understanding of the invention can be derived from a reading of exemplary claims 15 and 16, which are reproduced below.

15. A method for controlling an industrial process using a neural network, the industrial process having at least one time-variable parameter, the neural network including a control network and a background network, the method comprising the steps of:

training the control network using current process data to generate a current process model;

training the background network using representative process data to generate an averaged process model of the industrial process over a predetermined time period;

determining a parameter of the at least one time-variable parameter of the industrial process using the current process model, and

controlling the industrial process as a function of the determined parameter.

16. A method for controlling an industrial process using a neural network, the industrial process having at least one time-variable parameter, the neural network including a control network and a background network, the method comprising the steps of:

training the control network using current process data to generate a current process model;

training the background network using representative process data to generate an averaged process model of the industrial process over a predetermined time period;

> determining a parameter of the at least one time-variable parameter of the industrial process using the current process model:
>
> controlling the industrial process as a function of the determined parameter; and
>
> replacing the control network with the background network after one of a predetermined training period and an occurrence of an external event.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Ishizuka et al. (Ishizuka)	5,033,006	Jul. 16, 1991
Skeirik	5,408,586	Apr. 18, 1995
Samad et al. (Samad)	5,486,996	Jan. 23, 1996
Broese et al. (Broese)	5,608,842	Mar. 4, 1997

Claims 15-26 stand rejected under 35 U.S.C. § 103 as being unpatentable over Samad in view of Broese. Claims 17-23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Samad in view of Broese further in view of Skeirik. Claims 24-26 stand rejected under 35 U.S.C. § 103 as being unpatentable over Samad, Broese and Skeirik further in view Ishizuka.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 14, mailed Dec. 21, 1998) for the examiner's reasoning in support of the rejections, and to the appellants' brief (Paper No. 13, filed Sep. 25, 1998) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

With respect to appellants' grouping of claims set forth in the brief at pages 4-5, we note that appellants merely argue the limitations of independent claims 15 and 16 and rely upon these arguments for patentability of the dependent claims at pages 11-14 of the brief. Therefore, we will address only independent claims 15 and 16 with respect to Samad and Broese since appellants do not specifically address the other references.

With respect to the combination of Samad and Broese, appellants argue that neither reference nor the combination of teachings concerns the use of different training sets of data for the control network and the background network. (See brief at page 7.) We do not find this argument persuasive since independent claim 15 does not recite "different" data. Claim 15 merely sets forth "training the control network using current process data to generate a current process model" and "training the background network using representative process data to generate an averaged process model of the industrial process over a predetermined time period." There is no express limitation that the current process data cannot also be representative process data or from the same sampling period. Therefore, the data sets may be the same data or different data from

4

the same period of time. Appellants argue that the controller and the neural network of

Samad are trained by "the same data," not by "different" data. (See brief at pages 7-8.)

This argument is not persuasive since claim 15 does not recite that "different" data sets

are required for each control network.

Appellants argue that the combination of Samad and Broese would produce two

neural networks which would be the same, and further contend that claim 15 requires

two "different" sets or "another set" of data for training the control network. (See brief at

page 8.) We disagree with appellants as discussed above. We find no express

support for this argument in the language of claim 15.

Appellants further argue that claim 15 generates two different process models and

that the combination of Samad and Broese would produce the same model. We

disagree with appellants' interpretation of the language of independent claim 15. (See

brief at page 9.) While the models may be similar, they necessarily would not be exactly

the same. The language of independent claim 15 does not recite any specific detail of

the data sets used in training the networks or any specific details or characteristics of the

process models generated. Therefore, this argument is not persuasive. Since

appellants have not rebutted the examiner's ***prima facie*** case of obviousness, we will

sustain the rejection of independent claims 15, 16 and their dependent claims 17-26.
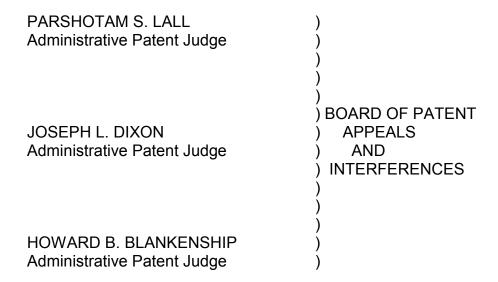
CONCLUSION

To summarize, the decision of the examiner to reject claims 15-26 under

Appeal No. 1999-1856
Application No. 08/686,792

35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may

be extended under 37 CFR § 1.136(a).

AFFIRMED

PARSHOTAM S. LALL Administrative Patent Judge	)
	)
	)
	)
	)
	) BOARD OF PATENT
JOSEPH L. DIXON Administrative Patent Judge	) APPEALS
	) AND
	) INTERFERENCES
	)
	)
	)
HOWARD B. BLANKENSHIP Administrative Patent Judge	)
	)

JD/RWK

Appeal No. 1999-1856
Application No. 08/686,792

KENYON & KENYON
ONE BROADWAY
NEW YORK, NY 10004